

September 8, 2022

U.S Department of Transportation
Docket Operations
West Building Ground Floor
Room W12-140
1200 New Jersey Avenue, S.E.
Washington, DC 20590

Subject: Petition for Exemption from 14 CFR 121.310(f)(5)(6) & 25.813(e)

Dear Sir or Madam:

Background:

Background information and general overview of exemption request.

Sections of 14 CFR Affected:

As provided for in Title 14, Code of Federal Regulations 14 CFR 11.61(b), per §11.81, American Airlines, Inc. (American) hereby petitions for exemption from the following 14 CFR part 121 regulation for the model 787-9:

Regulation	Amendment	Requirement
§121.310(f)(5)	121-380	No door may be installed in any partition between passenger compartments.
§121.310(f)(6)	121-380	No person may operate an airplane manufactured after November 27, 2006, that incorporates a door installed between any passenger seat occupiable for takeoff and landing and any passenger emergency exit, such that the door crosses any egress path (including aisles, crossaisles and passageways).

Related Sections of 14 CFR

Regulation	Amendment	Requirement
§25.813(e)	25-128	No door may be installed between any passenger seat that is occupiable for takeoff and landing and any passenger emergency exit, such that the door crosses any egress path (including aisles, crossaisles and passageways).

If granted, American would apply this exemption to 787-9 aircraft configured with premium mini-suite interiors meeting the technical and procedural conditions set forth in paragraph D of this document. American proposes a 2-class cabin with 51 Business Class mini-suites, 32 Premium Economy seats, and 161 Economy seats on a 787-9 under the same conditions outlined below. Exemption of 14 CFR 25.813(e) shall be obtained separately during the original or supplemental type certification process of the aircraft. All original Type Certificated aircraft are anticipated to fall under Exemption No. 10879B.

Nature and Extent of Relief Requested:

Regulation	Requirement	Why relief is necessary
§121.310(f)(5) at Amdt 121-380	No door may be installed in any partition between passenger compartments.	A typical mini-suite consists of a seat, an ottoman, and personal stowage units. To provide additional comfort, convenience and care for the passenger, every seat is surrounded by partial height partitions and sliding doors. Doors, being of great value to the occupants of such seat systems by providing the impression of privacy, are integral to this configuration. The proposed configuration will therefore not comply with the requirement of 14 CFR 121.310(f)(5). Description of relief sought: American respectfully requests that the FAA grant an exemption for doors installed in mini-suites solely to allow installation of mini-suites in 787-9 aircraft.
§121.310(f)(6) at Amdt 121-380	No person may operate an airplane manufactured after November 27, 2006, that incorporates a door installed between any passenger seat occupiable for takeoff and landing and any passenger emergency exit, such that the door crosses any egress path (including aisles, crossaisles and passageways).	These mini-suites consist of a seat with surrounding furniture intended to provide privacy to the occupants. The complete closure of the single mini-suite is possible by means of a sliding element, moving parallel to the airplane's longitudinal axis. The sliding elements are locked for taxi, takeoff, and landing and will be enabled for passenger use by the cabin crew. By operating passenger service with these doors, the proposed configuration is not complying with the requirements of §121.310(f)(6). Description of relief sought: American respectfully requests that the FAA grant an exemption for doors installed in mini-suites solely to allow installation of mini-suites in 787-9 aircraft.

The 787-9 certification basis includes 14 CFR 25.813 at Amdt 25-128 however NPRM No. 96-9 (related to Amdt 25-116) is discussed here as it reflects the most current position. NPRM No. 96-9 states the following as the rationale for imposing §25.813(e), §121.310(f)(5), and §121.310(f)(6):

"... door could be detrimental in evacuation of passengers, who tended not to recognize that there was an exit beyond the door, even if it were the closest available."

"It is now considered undesirable to permit the installation of a door between any passenger and an exit. Should such a door (either through omission or mechanical failure) become jammed in the event of an emergency evacuation, persons could be prevented or delayed in evacuating which could result in fatalities or injuries that would not otherwise have occurred. The hazards associated with a jammed door are still present whether or not passengers are on both sides of the door, and the recognition factor has not been mitigated. Either could result in the same consequences--failure of some passengers to evacuate the airplane."

It is American's understanding that the primary intent of 14 CFR §25.813(e), §121.310(f)(5), and §121.310(f)(6) is to protect passengers from being trapped or delayed during an emergency egress. American postulates that these rules limit the use of doors without considering systems that would alleviate the risk to occupants. For example, systems that would:

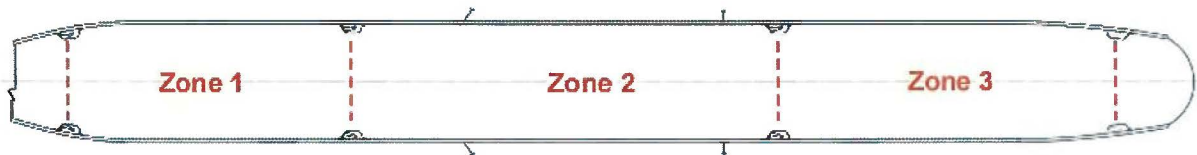
- Reduce the occupancy in a given area of the cabin.
- Limit the number of occupants in each mini-suite.
- Provide clear, redundant and independent egress paths to the main aisle.
- Provide redundant and independent door hold-open mechanisms, capable of withstanding emergency landing loads, which hold the door(s) in open position for taxi, takeoff and landing.

American submits that replacing conventional seats with mini-suites in a cabin will considerably reduce the number of occupants, which inherently improves safety. This has been acknowledged by the FAA in PS05-0272-C-I, as "Installation of mini-suites ... reduces the occupancy in a given area. All other things being equal, the reduction in the total number of occupants in a given part of the cabin is an enhancement to safety". The FAA has previously made determinations of Equivalent Level of Safety (ELOS) and granted Exemptions for 14CFR §25.813(e), §121.310(f)(5), and §121.310(f)(6) for passenger mini-suites with doors on multiple commercial aircraft models.

Mini-Suite Safety Features and Protocol

This exemption would be subject to the following design and operational conditions. Conditions numbers 1 and 7 are operating limitations that will be documented in the limitations section of the airplane flight manual:

1. When passengers are carried, one flight attendant is required to be designated in each zone where mini-suites are installed, or two flight attendants are required to be designated in a zone where mini-suites are installed, and the number of mini-suites exceeds 32, in addition to the number of flight attendants that are required by §121.391(a). The flight attendants must have responsibility to verify the proper configuration of the mini-suite doors required by condition no. 6.
2. Installation of mini-suites is limited to a maximum as defined in the separate 14 CFR 25.813(e) exemption noted in Section A above. Additionally, mini-suites are subject to zonal limits for zones A, B, and C. A zone is defined as the area between consecutive passenger-door pairs, as illustrated. For example, zone A is between doors 1 and 2. Each mini-suite provides accommodation for only one passenger for taxi, takeoff, and landing.



3. Each mini-suite entrance provides access to only that specific mini-suite (i.e., no other access to any other mini-suite or part of the airplane).
4. Mini-suites must not provide an egress path for evacuation for any person other than the single passenger of the mini-suite. If an Overhead Crew Rest (OFCR) is installed such that any egress path is into a mini-suite, the OFCR must have a limitation that no occupancy is allowed during taxi, takeoff, and landing.
5. Installation of the mini-suites must not introduce any additional deterrents to evacuating passengers, including from other parts of the cabin. This assessment must include use of emergency-passage feature (EPF) required by condition no. 11.
6. The mini-suite doors must be open during taxi, takeoff, and landing, with the hold-open retention mechanisms engaged.
7. The hold-open retention mechanism for mini-suite doors must hold the doors open under §25.561(b) emergency-landing conditions.
8. The mini-suite doors must have a secondary, backup hold-open retention mechanism that can be used to "lock" the doors in the open position. The secondary retention mechanism must hold the doors open under §25.561(b) emergency-landing conditions. Secondary retention mechanism control must be positioned such that a seated and belted passenger would not be able to operate it.

9. Appropriate placards, or other equivalent means, must be provided to ensure that the mini-suite doors are in the open position for taxi, takeoff, and landing, with the hold-open retention mechanisms engaged.
10. Training and operating instruction materials regarding the proper configuration of the mini-suite doors for taxi, takeoff, and landing must be incorporated into the flight-attendant training programs and appropriate operational manuals.
11. A dual means of egress out of each mini-suite must be provided such that either egress path can accommodate both a 5th percentile female and a 95th percentile male. Any egress means installed in the mini-suite door must be available in the event the door becomes jammed. American will provide demonstration by naïve-subject tests that any EPF is simple and obvious to open, can be opened by a single person, and will not be placed outside the confines of the suite.
12. The height of the mini-suite walls and doors must be such that a 95th percentile male can fit between them and the airplane's interior furnishings. Certification documentation is required to validate that a 5th percentile female and a 95th percentile male will be able to exit the mini-suite in the event the door is closed and unopenable. This certification documentation must be provided for each different mini-suite layout. Certification documentation may be in the form of a test or similarity analysis to a previously certified mini-suite.
13. No mechanism to latch the door (or doors, if applicable) in the closed position is allowed.
14. The mini-suite doors must be openable from the inside or outside with 25 pounds of force or less (regardless of power failure conditions, if applicable).
15. Mini-suite installation must not reduce the dimensions of the main aisles, cross aisles, and passageways below the regulatory minimum.
16. Mini-suite doors must not impede any egress paths in the open, closed, or translating position.
17. The mini-suite doors must be openable even with a crowded aisle.
18. Unless any emergency passage feature (see condition 11) is operable from any position of the door, the primary and secondary hold-open retention mechanisms (see conditions 7 and 8) must also retain the door under § 25.562 dynamic emergency landing conditions.

Powered doors—if provided.

19. If the mini-suite doors are powered, the doors must remain locked in the open position after power loss to the mini-suite.
20. Powered-door operations must not be hazardous to passengers. For example, compressive force of the door closing on body parts between the door and the door jamb must not be a hazard. Both crushing of body parts and asphyxiation need to be considered.
21. A powered-door system must be designed to protect components from damage caused by items blocking door operation, misalignment of the mechanism, and minor deformation of the structure that would prevent the door from being correctly positioned for taxi, takeoff, and landing.
22. A powered-door system must be designed to prevent overheating of components that could be an ignition source.

No Adverse Effect on Safety:

The mini-suites described herein, along with the noted operational limitations, will provide passengers with multiple redundancies to ensure safe egress from the suite to standard aircraft exit paths. These systems and procedures will ensure against entrapment behind a jammed door such that the evacuation of any occupant will not be compromised in any way due to the existence of the doors. The aircraft exits are in Type C-A-C-A configuration, allowing egress of 55-110-55-110 persons per aircraft side (as per 14 CFR 25.807). Operation of the individual-occupant mini-suites in the proposed configuration limits Zone 1 to 32 passengers (egress capacity of 110 persons through Doors 1-Left and 1-Right), while the Zone 2 total occupancy of 72 passengers (including 19 mini-suites) is well below the 220 person combined egress capacity of Doors 2-Left and 2-Right. This is in-line with PS05-0272-C-I assertion that "all other things being equal, the reduction in the total number of occupants in a given part of the cabin is an enhancement to safety" as noted above.

Public Interest:

American submits that granting this exemption will be in the public interest by providing an adequate level of safety for the design features, which is of high interest of passengers and operators. Mini-suites are becoming common type of premium seating for long-range travel throughout the public aircraft transport industry. American wants to offer a high level of comfort and privacy that mini-suites with doors can provide to our customers, allowing American to generate additional revenues from the premium product while remaining competitive with domestic and foreign airlines. This additional revenue helps to provide an offset opportunity to reduce the cost of economy class travel, thus providing the potential to benefit all passengers of the flying public, all without compromising safety.

Summary:

American requests to waive publication and comment since this exemption is similar to previously approved ELOS on Boeing 777, exemptions for Boeing 747, 777 and 787-8/-9/-10, and Airbus A330, A340, and A350.

Summary to be Published in the Federal Register

PETITIONER: American Airlines, Inc

SECTION OF 14 CFR AFFECTED: 121.310(f)(5) and 121.310(f)(6)

DESCRIPTION OF RELIEF SOUGHT:

American is requesting relief from 14 CFR §121.310(f)(5) and §121.310(f)(6) so that B787-9 aircraft may be operated in a configuration with doors installed in partitions separating passenger compartments, and



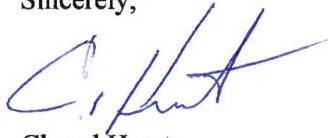
doors installed between occupiable passenger seats and emergency exits during takeoff and landing. This configuration is contrary to the requirements of 14 CFR §25.813(e), §121.310(f)(5) and §121.310(f)(6). The FAA previously granted exemption 10879B for the 787 Series of aircraft on 14 CFR §25.813(e), but American requires further exemption of 14 CFR §121.310(f)(5) and §121.310(f)(6) in order to operate in the approved condition. Exemption to 14 CFR §121.310(f)(5) and §121.310(f)(6) has been previously granted to a variety of petitioners and aircraft on Exemption Nos. 10865, 17186, 17531, and 18136.

Conclusion

Based on information provided in this petition, American requests the same relief on Boeing 787-9 aircraft as permitted in Exemptions 10865 (A321 Series), 17186 (A350 Series), 17531 (777 Series), 18136 (A330 and A340 Series) for Parts 121.310(f)(5) and 121.310(f)(6), and by similarity to 10879B (787 Series), 17634A (777 Series), 17188 (777 Series), and 11008 (747 Series) for Part 25.813(e). Such an exemption will allow American to offering a high level of safety and comfort that dually benefits the commercial aviation industry and the flying public.

Questions or comments regarding this petition may be directed to James Griffin at 918-292-3768 or James.Griffin@aa.com.

Sincerely,



Cheryl Hurst
Director Cabin and Regulatory Standards

CH/jg